Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1 to 42 (Canceled)

43. (Currently Amended) A method of lowering the amount of an endogenously produced substance in an extracellular fluid of a subject, comprising administering to the subject a chimeric protein comprising a functional domain and a carrier domain, wherein

the functional domain comprises a ligand-binding domain of a first receptor, wherein the ligand-binding domain binds an endogenously produced substance;

the carrier domain comprises an amino acid sequence which binds a mammalian cell surface receptor other than the first receptor, wherein (a) the amino acid sequence is from a protein other than the first receptor, and (b) the cell surface receptor is selected from the group consisting of low density lipoprotein receptor (LDLR), transferrin receptors, asialoglycoprotein receptors, adenovirus receptors, retrovirus receptors, lipoprotein (a) receptors, LDLR-like protein (LRP) receptors, acetylated LDLR, mannose receptors and mannose-6-phosphate receptors,

such that the chimeric protein binds to the endogenously produced substance in the extracellular fluid of the subject and to the cell surface receptor on the cell, whereupon the cell surface receptor on the cell transports the chimeric protein and the endogenously produced substance into the cell, thereby lowering the amount of the endogenously produced substance in the extracellular fluid of a subject.

44. (Withdrawn) The method of claim 43, wherein the endogenously produced substance is a lipoprotein.

45. (Previously Presented) The method of claim 43, wherein the endogenously produced substance is a naturally occurring metabolite.

46. (Previously Presented) The method of claim 43, wherein the endogenously produced substance is a glycosaminoglycan (GAG).

47. (Withdrawn) The method of claim 43, wherein the endogenously produced is a naturally occurring hormone.

48. (Withdrawn) The method of claim 43, wherein the endogenously produced substance is a nutrient.

49. (Withdrawn) The method of claim 48, wherein the nutrient is glucose.

50. (Withdrawn) The method of claim 43, wherein the endogenously produced substance is an immunoglobulin.

51. (Previously Presented) The method of claim 43, wherein the cell surface receptor is a transferrin receptor.

52. (Withdrawn) The method of claim 43, wherein the cell surface receptor is asialoglycoprotein receptor.

53. (Withdrawn) The method of claim 43, wherein the cell surface receptor is adenovirus receptor.

54. (Withdrawn) The method of claim 43, wherein the cell surface receptor is retrovirus receptor.

55. (Withdrawn) The method of claim 43, wherein the cell surface receptor is LDLR.

56. (Withdrawn) The method of claim 43, wherein the cell surface receptor is lipoprotein (a) receptor.

57. (Withdrawn) The method of claim 43, wherein the cell surface receptor is LDLR-like protein (LRP) receptor.

58. (Withdrawn) The method of claim 43, wherein the cell surface receptor is mannose receptor or mannose-6-phosphate receptor.

59. (Withdrawn) The method of claim 43, wherein the endogenously produced substance is a bile salt.

60. (Withdrawn) The method of claim 43, wherein the endogenously produced substance is an acetylated LDL.

61. (Withdrawn) The method of claim 43, wherein the endogenously produced substance is a glycolipid.

62. (Withdrawn) The method of claim 61, wherein the glycolipid is ceramidetrihexosidase,

63. (Withdrawn) The method of claim 61, wherein the glycolipid is glucocerebrosidase.

64. (Previously Presented) The method of claim 43, wherein the endogenously produced substance is a cytokine.

65. (Withdrawn) The method of claim 48, wherein the nutrient is a lipid.

66. (Withdrawn) The method of claim 61, wherein the subject has Gaucher disease.

67. (Withdrawn) The method of claim 61, wherein the subject has Fabry disease.

68. (Previously Presented) The method of claim 46, wherein the subject has Hunter Syndrome, Hurler Syndrome or Sly Syndrome.

69. (Currently Amended) A method of lowering the amount of an endogenously produced substance in an extracellular fluid of a subject, comprising administering to the subject a chimeric protein comprising a functional domain and a carrier domain, wherein

the functional domain comprises a ligand-binding domain of a first receptor selected from the group consisting of a low density lipoprotein receptor (LDLR), an acetylated LDLR, a transforming growth factor β receptor, a cytokine receptor, a hormone receptor, a glucose receptor, a glycolipid receptor, and a glycosaminoglycan receptor, wherein the ligand-binding domain binds the endogenously produced substance;

the carrier domain comprises an amino acid sequence that binds a mammalian cell surface receptor other than the first receptor, wherein (a) the amino acid sequence is from a protein other than the first receptor, and (b) the cell surface receptor is selected from the group consisting of LDLR, transferrin receptors, asialoglycoprotein receptors, adenovirus receptors, retrovirus receptors, lipoprotein (a) receptors, LDLR-like protein (LRP) receptors, acetylated LDLR, mannose receptors and mannose-6-phosphate receptors,

such that the chimeric protein binds to the endogenously produced substance in the extracellular fluid of the subject and to the cell surface receptor on the cell, whereupon the

cell surface receptor on the cell transports the chimeric protein and the endogenously produced substance into the cell, thereby lowering the amount of the endogenously produced substance in the extracellular fluid of a subject.

70. (Withdrawn) The method of claim 69, wherein the mammalian cell surface receptor is LDLR.

71. (Previously Presented) The method of claim 69, wherein the mammalian cell surface receptor is transferrin receptor.

72. (Withdrawn) The method of claim 69, wherein the mammalian cell surface receptor is asialoglycoprotein receptor.

73. (Withdrawn) The method of claim 69, wherein the mammalian cell surface receptor is retrovirus receptor.

74. (Withdrawn) The method of claim 69, wherein the mammalian cell surface receptor is lipoprotein (a) receptor.

75. (Withdrawn) The method of claim 69, wherein the mammalian cell surface receptor is LDLR-like protein (LRP) receptor.

76. (Withdrawn) The method of claim 69, wherein the mammalian cell surface receptor is mannose receptor or mannose-6-phosphate receptor.

77. (Previously Presented) The method of claim 43, wherein the extracellular fluid is blood or lymph.

78. (Previously Presented) The method of claim 69, wherein the extracellular fluid is blood or lymph.

79. (Currently Amended) A method of lowering the amount of a glycosaminoglycan (GAG) in an extracellular fluid of a subject, comprising administering to the subject a chimeric protein comprising:

a functional domain comprising a ligand-binding domain of a GAG receptor, wherein the ligand-binding domain binds ~~the~~ a GAG; and

a carrier domain comprising an amino acid sequence that binds a transferrin receptor,

such that the chimeric protein binds to the GAG in the extracellular fluid of the subject and to the transferrin receptor on the cell, whereupon the transferrin receptor on the cell transports the chimeric protein and the GAG into the cell, thereby lowering the amount of the GAG in the extracellular fluid of a subject.

80. (Withdrawn) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of LDLR.

81. (Withdrawn) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of transforming growth factor β receptor.

82. (Previously Presented) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a cytokine receptor.

83. (Withdrawn) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a hormone receptor.

84. (Withdrawn) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a glucose receptor.

85. (Withdrawn) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a glycolipid receptor.

86. (Previously Presented) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a glycosaminoglycan receptor